

FIVE NEW SPECIES OF *PHORBELLIA* ROBINEAU-DESVOIDY,  
SUBGENUS *OXYTAENIA* SACK, FROM NORTH AMERICA  
(DIPTERA: SCIOMYZIDAE)

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*Abstract.*—*Pherbellia borea*, *P. californica*, *P. marthae*, *P. paludum*, and *P. ursilacus* are described as new species from North America. Illustrations and photographs of the copulatory apparatus and geographic distribution are given for the new species as well as for *P. bryanti* Steyskal and *P. propages* Steyskal. All are members of the *P. propages* group.

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The genus *Pherbellia* Robineau-Desvoidy is known from all the zoogeographic realms of the world. Within the family Sciomyzidae *Pherbellia* constitutes by far the largest genus. Prior to this study there were 32 described species of *Pherbellia* from North America north of Mexico. Some of the species which occur in the Nearctic also occur in the Neotropic and Palaearctic regions.

It seems advisable to recognize *Pherbellia* as a single genus as did Steyskal (1961, 1966) until a more comprehensive taxonomic study can be made. The genus has been broken into several subgenera. This paper is concerned only with North American members of the subgenus *Oxytaenia* Sack.

The type-species of the subgenus *Oxytaenia* is *Pherbellia brunnipes* (Meigen). It was recorded by Melander (1920) and Steyskal (1965) as Holarctic, being found in Wyoming and Idaho, USA, as well as Europe. However, Steyskal (1966) stated in regard to *P. brunnipes* ". . . my examination of European material shows a species different from any I have seen from this continent, including material from the Melander collection. Of the American species, it is most closely related to *P. bryanti* and *P. propages* . . ." Close examination of illustrations by El'berg (1965) and Rozkošný (1966) showing European terminalia further confirms that *P. brunnipes* is Palaearctic. On the basis of external characters, close scrutiny of a female specimen from Melander's collection from Wyoming labeled *P. brunnipes* reveals it to be *P. prefixa* Steyskal.

Presently from North America there are nine species referred to the sub-

genus *Oxytaenia*, which is now comprised of *Pherbellia beatricis*, *P. bryanti*, *P. prefixa*, *P. propages* plus the five new species which are herein described. All are quite small, rather inconspicuous, dull colored flies.

The new species are separated from *Pherbellia propages* and *P. bryanti*. These new species along with *P. propages* and *P. bryanti* are here referred to as the *P. propages* group. The male postabdomen of *Pherbellia bryanti*, *P. propages*, and the new species provides the most definitive means of separation. For identification the postabdomen must first be severed from the specimen and placed in a 10% solution of potassium hydroxide until the viscera and muscular tissues have been dissolved. The postabdomen is then flushed with distilled water and examined under the microscope in a droplet of glycerine. Staining the prepared section with acid fuchsin will further intensify subtle membranous structures, thereby facilitating determinations.

The postabdomen of North American *Oxytaenia* may still be typified as stated by Steyskal (1966): "surstyli of anterior and posterior pairs close together, the posterior pair broad basally, usually with a narrow apical point more or less directed posteriad, the anterior pair small and lying backward against the posterior pair; hypandrium with anterior margin transverse, lateral processes consisting of broad anterior lamina, and more or less blade-like posterior sclerite bearing variously developed apical prongs; phallopodeme deeply cleft, Y-shaped, arms bearing clamshell-like pregonite; aedeagus broad; postgonites massive, black, usually with small but deep apical emargination giving them the appearance of a crab's claw; ejaculatory apodeme narrow-headed, relatively small and short, but with large vesicle (seminal pump), the vas deferens short and of small diameter."

The *Pherbellia propages* group is here considered to be monophyletic. The adults show scarcely any external differences. However, dissection of the male terminalia reveals distinct differences in the aedeagi and the posterior process of the hypandria. Lesser differences are seen in the posterior and anterior surstylus as well as the ejaculatory apodeme and seminal pump. Some species are allopatric such as *P. californica* and *P. ursilacus* as shown on the locality map (Fig. 34). Four of the species are sympatric at Aklavik, Northwest Territories (Figs. 33, 34).

The holotypes of both *Pherbellia propages* and *P. bryanti* have been examined and are as illustrated in this paper. Examination of paratypes of the above species reveals that several species of the *P. propages* group are represented. Therefore, the locality maps as they appear in this paper indicate the known distribution for *P. propages* and *P. bryanti*, sensu stricto.

The groundwork and stimulus for this study was provided by Steyskal (1966). In his description of *Pherbellia propages* he observed and illustrated differences in the posterior process of the hypandrium. He felt that the differences might represent subspecies, however he made no mention at that time of aedeagal differences.

Members of the *Pherbellia propages* group share the following charac-

ters: Frons with median stripe less than  $\frac{2}{3}$  as long as distance from ocellus to frontal margin; anterior fronto-orbital bristle much shorter than posterior fronto-orbital bristle; arista with short, fine, closely set hairs; mesopleuron entirely bare; pteropleuron with all bristles of nearly equal length; sternopleuron usually with 2 very strong bristles and several weak bristles along the upper surface; wing not patterned, at most with anterior margin and crossvein clouded; wing length of males, 2.3–3.4 mm; first vein not surpassing level of *ta*, either ending short of it or at the same level; halter pale yellowish or whitish.

All possess a mesoscutal pattern of intradorsocentral and sublateral brown stripes. The degree of distinctness seems dependent on the condition of the insect at the time of capture. In general old battered specimens tend to lose their distinct stripes. All specimens I have seen in the *Pherbellia ursilacus* series show this character indistinctly.

### *Pherbellia californica* Orth, New Species

Figs. 1, 2, 6, 17–20, 34

Holotype male.—Height of head  $\frac{2}{3}$  width. Medifacies yellowish to whitish pruinose, facial grooves subshiny, parafacies and cheeks pruinose yellowish to whitish respectively. Frons yellowish, slightly narrowed anteriorly. Mid-frontal stripe extending  $\frac{1}{2}$  distance from anterior ocellus to anterior margin of frons. Ocellar triangle and orbital plates with greyish pruinosity. Orbital plates tapered anteriorly, extending beyond midfrontal stripe. Orbito-antennal spot lacking; narrow strip of whitish pruinosity along upper orbital margin. Two pairs of fronto-orbital bristles, anterior pair  $\frac{1}{2}$  as long; ocellars, postocellars, and inner and outer verticals well developed. Occiput greyish pruinose. Short black setae on lower  $\frac{2}{3}$  of cheeks and parafacies on anterior  $\frac{1}{2}$  of frons, between ocellar and postocellar bristles, along outer parts of orbital plates, and in midcervial patch. Lateral occipital margins with stronger setae and bristles. Antennae testaceous, segment 3 elongate oval. Arista blackish with short hairs. Palpi yellowish, labium and labella yellowish brown.

Thorax dorsally grey, pruinose, with indistinct brownish longitudinal stripes.

Mesopleuron grey, pruinose throughout, posterior  $\frac{1}{3}$  brownish. Remainder of thoracic surfaces greyish pruinose with some tendency toward brown or brownish yellow. Mesopleuron bare; pteropleuron with a cluster of bristles of nearly equal size. Sternopleuron with fine short setae over most of surface, 2 well developed bristles dorsally and well developed bristles ventrally. Prosternum bare.

Coxae yellowish white, pruinose. Forefemur and tibia dark brownish infumated, tarsal segments light brown infumated. Mid- and hindlegs entirely testaceous.

Wing length 3.4 mm. Membrane greyish-yellow hyaline; costal margin



Fig. 1. *Pherbellia californica*, paratype male. Point-mounted. Photo by M. E. Badgley, University of California, Riverside.

and wing veins testaceous; crossveins brownish, slightly infuscated. No stump veins; anterior cross vein slightly oblique, first vein not surpassing the level of anterior cross vein; anal vein reaching wing margin. Halter, squama, and squamal ciliae yellowish.

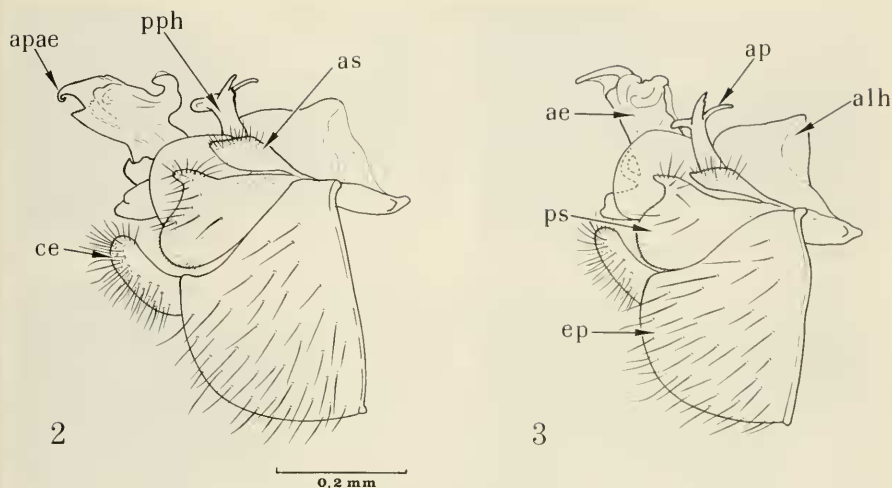
Abdominal segments testaceous, slightly infumated dorsally; andrium testaceous; terminalia as in Fig. 2. Copulatory apparatus as in Figs. 6, 17–20.

Allotype female.—Similar to holotype except for reproductive structures. Wing length 3.3 mm.

Holotype.—♂, California, Mendocino Co., 2 mi N of Willits, 24 April 1967, elevation 1330 feet. T. W. Fisher—R. E. Orth, field notes accession no. AS-578. National Museum of Natural History.

Allotype.—♀, same data as holotype. Deposited with holotype.

Paratypes.—Same locality and collector data as holotype. 12 June 1966, AS-482 (8 ♀, 26 ♂); 24 May 1967, AS-578 (13 ♀, 36 ♂); 23 April 1968, AS-669 (3 ♀, 3 ♂); 24 April 1968, AS-671 (2 ♂). At Agriculture Canada, California Academy of Sciences, Cornell University, University of California at Riverside, and the National Museum of Natural History.



Figs. 2, 3. 2, *Pherbellia californica*, paratype male; 2 mi N of Willits, Mendocino Co., California, 24 May 1967, T. W. Fisher-R. E. Orth; terminalia, sinistral view, inverted; apae = apical process of aedeagus; as = anterior surstylus; ce = cerci; pph = posterior process of hypandrium. 3, *P. borea*, paratype male; Hay River, N.W.T., 10 Sept. 1932, O. Bryant, lot no. 352; terminalia, sinistral view, inverted; ae = aedeagus; alh = anterior lamina of hypandrium; ap = apical prong; ep = epandrium; ps = posterior surstylus.

Other specimens.—In addition to the above I have seen material from the following localities: *California*: Humboldt Co., 2 mi S of Orick; Marin Co., 2 mi NW of Bolinas; .5 mi S of Tomales; Mendocino Co., 7 mi N of Hopland; Ukiah; Plumas Co., 1 mi E of Chester; .5 mi S of Crescent Mills; Rock Creek at Hwy. 36; Shasta Co., 5.25 mi NW of Anderson; Siskiyou Co., 3.5 mi S of Fort Jones, Scott Valley. *Oregon*: Benton Co., Parker Creek, Mary's Peak; Hood River Co., .5 mi S of Sherwood Campground, Mt. Hood National Forest; Marion Co., Breitenbush; Wasco Co., Hwy. 26, 1 mi S of Hwy. 216 Jct. *Washington*: Lewis Co., Adna.

Variation.—Wing length 2.6–3.4 mm in males, 2.8–4.0 mm in females.

Discussion.—This species is known only from California, Oregon and Washington. It overlaps no other species in the *Pherbellia propages* group. It is the only species in the group which shows considerable variation in the aedeagus. In specimens collected in the general proximity of the type-locality the apical process of the aedeagus bends back on its self while in more northern specimens it is opened out more (see Figs. 17, 18). Deviation of the aedeagus and subtle differences in the posterior process of the hypandrium in material from localities away from the type-locality may represent a subspecies.



*Pherbellia borea* Orth, New Species

Figs. 3, 4, 11-13, 33

Holotype male.—Similar to *Pherbellia californica* except as follows. Mid- and hindfemora infuscated, brown, hindfemur darker than midfemur; tibiae and tarsi brown, slightly infumated. Abdominal segments brownish grey. Terminalia as in Fig. 3. Copulatory apparatus as in Figs. 4, 11-13. Wing length 2.9 mm.

Female.—Not known.

Holotype.—♂, Northwest Territories, Aklavik, 25 July 1931, O. Bryant, lot no. 300. National Museum of Natural History.

Paratypes.—*Northwest Territories*: Aklavik, 5 August 1930, lot no. 110, 18 Sept. 1930, lot no. 153, 10 Aug. 1931, lot 289, O. Bryant (3 ♂); Hay River, 10 Sept. 1932, lot no. 352, O. Bryant (1 ♂); Hyndman, 68°5'N, 131°03'W, 30 July 1969, 1 Aug. 1969, G. E. Shewell (3 ♂, 2 ♂) respectively. Wing length 2.6-3.0 mm. At Agriculture Canada, California Academy of Sciences, University of California at Riverside, and the National Museum of Natural History.

Discussion.—Distribution of this species is the most northern of the *Pherbellia propages* group. The southern-most collection site is Hay River, Northwest Territories approximately 61° north latitude. This species name is from the Latin adjective borea—northern.

*Pherbellia marthae* Orth, New Species

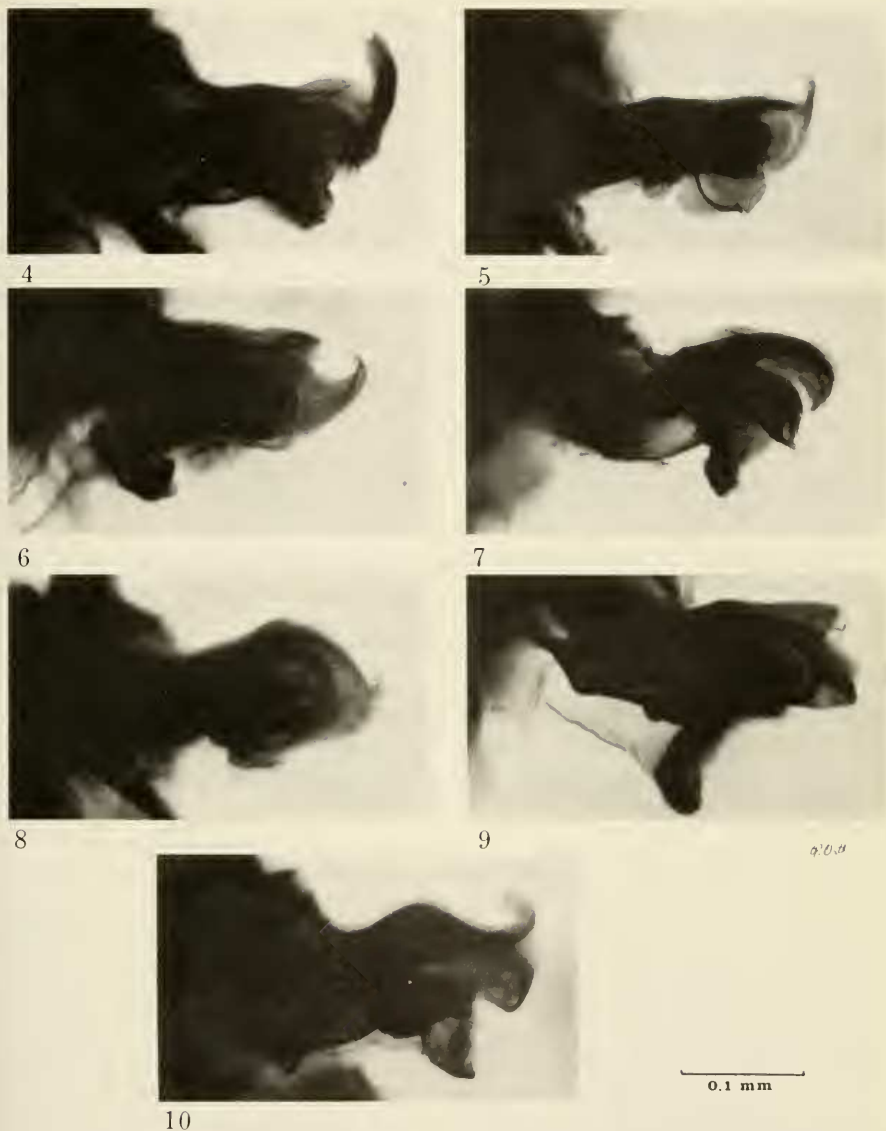
Figs. 7, 21-23, 33

Holotype male.—Similar to *Pherbellia californica* except as follows. Mid- and hindlegs brown, slightly infuscated, hindfemur darker than midfemur. Abdominal segments brownish grey. Copulatory apparatus as in Figs. 7, 21-23. Wing length 3.2 mm.

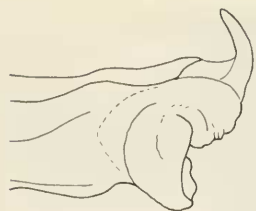
Female.—Not known.

Holotype.—♂, Churchill, Manitoba, 2-9 Aug. 1937, D. G. Denning. National Museum of Natural History.

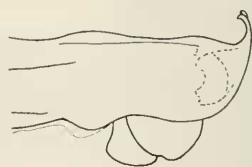
Paratypes.—*Alberta*: Cascade Trail, Banff, 10 July 1968, elevation 5000 feet, H. J. Teskey (1 ♂); Cooking Lake, 20 June 1937, 25 July 1937, F. O. Morrison (2 ♂); 1.5 mi W of Lacombe, 23 May 1962, C. O. Berg (2 ♂); Slave Lake, 6 June 1966, G. E. Shewell (1 ♂). *British Columbia*: Ketchum Lake, 58°22'N, 131°45'W, 26 Aug. 1960, W. W. Moss (1 ♂); Spectacle Lake, Oliver, 10 June 1959, L. A. Kelton (1 ♂). *Manitoba*: Churchill, 2-9 Aug. 1937, D. G. Denning (1 ♂); Herchmer, 10 Aug. 1937, D. G. Denning (1 ♂); The Pas, 28 May 1930, O. Bryant, lot no. 6 (1 ♂); Treesbank, 17 Oct. 1915, J. M. Aldrich (1 ♂). *Northwest Territories*: Aklavik, 18 June 1931, 22 June 1931, 24 June 1931, O. Bryant, lot nos. 234, 238, 241 (1 ♂, 1 ♂, 1 ♂); Fort Franklin, Great Bear Lake, 22 June 1969, G. E. Shewell (3 ♂); Lac Maunoir, N shore, 15 July 1969, 17 July 1969, G. E. Shewell (1 ♂, 11 ♂)



Figs. 4-10. Aedeagi, sinistral profiles. 4, *Phorbettia borea*, paratype male; Aklavik, N.W.T., 18 Sept. 1930, O. Bryant, lot no. 153. 5, *P. bryanti*; Yellowstone National Park, Gibbon Falls, Wyoming, 27 July 1956, A. L. Melander. 6, *P. californica*, paratype male; 2 mi N of Willits, Mendocino Co., California, 24 May 1967, T. W. Fisher-R. E. Orth. 7, *P. marthae*, paratype male; Churchill, Manitoba, 2-7 Aug. 1937, D. G. Denning. 8, *P. paludum*, paratype male; Gander, Newfoundland, 17 June 1961, C. P. Alexander. 9, *P. propages*; Long Lake, Burleigh Co., North Dakota, 4 June 1968, W. W. Wirth. 10, *P. ursilacus*, paratype male; Bear Lake, Bear Lake Co., Idaho, 19 July 1959, B. A. Foote.



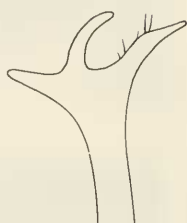
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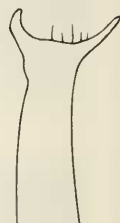
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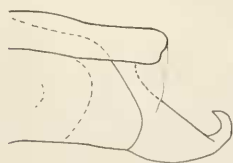
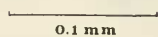
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Figs. 11-20. 11-13, *Pherbellia borea*, paratype male; Aklavik, N.W.T., 18 Sept. 1930, O. Bryant, lot no. 153. 14-16, *P. bryanti*; Yellowstone National Park, Gibbon Falls, Wyoming, 27 July 1956, A. L. Melander. 17-20, *P. californica*: 17, 19, 20, Paratype male, 2 mi N of Willits, Mendocino Co., California, 24 May 1967, T. W. Fisher-R. E. Orth; 18, Adna, Wash-



respectively; Norman Wells, 25 June 1969, G. E. Shewell (3 ♂). *Saskatchewan*: Cantyre, 53°23'N, 101°50'W, 12 Sept. 1959, J. R. Vockeroth (4 ♂); Quill Lake, 20 May 1968, H. J. Teskey (1 ♂); Uranium City, 18, 19, 21 June 1962, J. G. Chillcott (1 ♂, 1 ♂, 1 ♂); Yorkton, 16 Sept. 1959, J. R. Vockeroth (1 ♂). *Yukon*: 58 mi E of Dawson, Gravel Lake, 12 Aug. 1962, P. J. Skitsko (1 ♂); La Force Lake, 9 July 1960, J. E. H. Martin (1 ♂); Takhini Hot Springs, 16 Aug. 1962, R. E. Leech (1 ♂). *Alaska*: Fairbanks, 7 June 1948, R. Sailer (2 ♂); Goldstream River Valley, 8½ mi N of Fairbanks, 29 July 1971, B. A. Foote (1 ♂); Wonder Lake, McKinley National Park, 25 July 1965, D. Chant (1 ♂). *Montana*: 2 mi E of Babb, 22 July 1967, B. A. Foote (2 ♂); 7 mi W of Eureka, 15 July 1965, B. A. Foote (1 ♂). *North Dakota*: McHenry Co., 4 mi N of Upham, 5 June 1969, W. W. Wirth (1 ♂); Mountrail Co., Powers Lake, 8 June 1969, W. W. Wirth (2 ♂). Wing length 2.3–3.2 mm. At Agriculture Canada, Cornell University, University of California at Riverside, and the National Museum of Natural History.

Discussion.—This species was the most common of the *P. propages* group found in collections. It, along with three other species of the group, has been collected at Aklavik, Northwest Territories. It is a northwestern and mid-continent species. This species is named for my wife, Martha.

### *Pherbellia paludum* Orth, New Species

Figs. 8, 24–26, 33

Holotype male.—Similar to *Pherbellia californica* except as follows. Mid- and hindfemora and tibiae infumated, brown, hindfemur darker than mid-femur; mid- and hindtarsi light brownish. Abdominal segments brownish grey. Copulatory apparatus as in Figs. 8, 24–26. Wing length 2.65 mm.

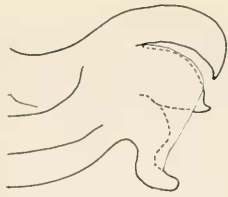
Female.—Not known.

Holotype.—♂, Newfoundland, Woody Point Rd., 10 June 1961, C. P. Alexander. National Museum of Natural History.

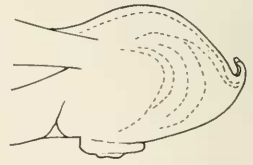
Paratypes.—*Alberta*: 40 mi W of Edmonton (Wabamun Lake), 23 May 1962, C. O. Berg (1 ♂); 1.5 mi W of Lacombe, 23 May 1962, C. O. Berg (1 ♂). *Newfoundland*: Gander, 17 June 1961, C. P. Alexander (1 ♂); Woody Point Rd., 10 June 1961, C. P. Alexander (1 ♂). *Northwest Territories*: Aklavik, 5 Aug. 1930, lot no. 110, O. Bryant (2 ♂); Aklavik, 18 July 1932, lot no. 305, O. Bryant (1 ♂). *Ontario*: Midland, 12 May 1959, J. G. Chillcott (1 ♂); 5 mi S of Severn Falls, 4 May 1959, J. G. Chillcott (2 ♂). *Alaska*: Fort Richardson, Eagle River Flats, 25 May 1948, E. Lepage (1 ♂); Matan-

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ington, 10 July 1917, A. L. Melander. 11, 14, 17, 18. Aedeagus sinistral profile. 12, 15, 19. Posterior process of hypandrium, side view. 13, 16, 20. Posterior process of hypandrium, posterior oblique view.



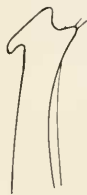
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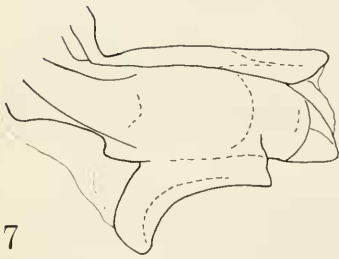
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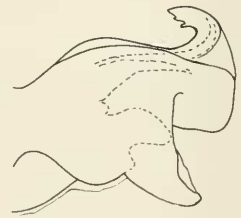
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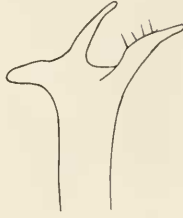
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Figs. 21-32. 21-23, *Pherbellia marthae*, paratype male; Churchill, Manitoba, 2-7 Aug. 1937, D. G. Denning. 24-26, *P. paludum*, paratype male; Gander, Newfoundland, 17 June 1961, C. P. Alexander. 27-29, *P. propages*; Long Lake, Burleigh Co., North Dakota, 4 June

uska, 14 Aug. 1952, C. O. Berg (1 ♂). *Idaho*: Benewah Co., 1 mi N of Plummer, 26 May 1959, B. A. Foote (1 ♂). *Michigan*: Midland Co., 19 May 1939, R. R. Dreisbach (1 ♂); Osecola, 1 June 1947, R. R. Dreisbach (1 ♂). *Wyoming*: Biscuit Basin, Yellowstone National Park, 2 Aug. 1934, A. L. Melander (1 ♂). At Agriculture Canada, California Academy of Sciences, Cornell University, University of California at Riverside, and the National Museum of Natural History.

Discussion.—*Pherbellia paludum* has the most widespread distribution of any species of the *P. propages* group. However in collections it is relatively rare. This species is known transcontinentally north of 44°N latitude. This species name is the genitive pleural of the Latin *palus*, meaning “of marshes.”

### *Pherbellia ursilacus* Orth, New Species

Figs. 10, 30–32, 34

Holotype male.—Similar to *Pherbellia californica* except as follows. This specimen, along with the paratypes, shows a tendency toward being greasy. Coloration tends toward yellowish brown in most areas. Thorax dorsally cinereous, with only faint longitudinal darker stripes. Copulatory apparatus as in Figs. 10, 30–32. Wing length 3.2 mm.

Female.—Not known.

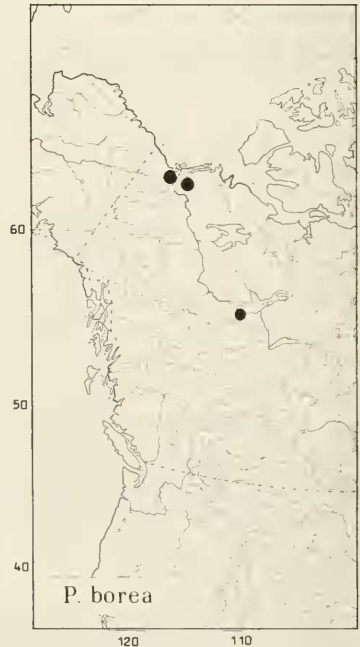
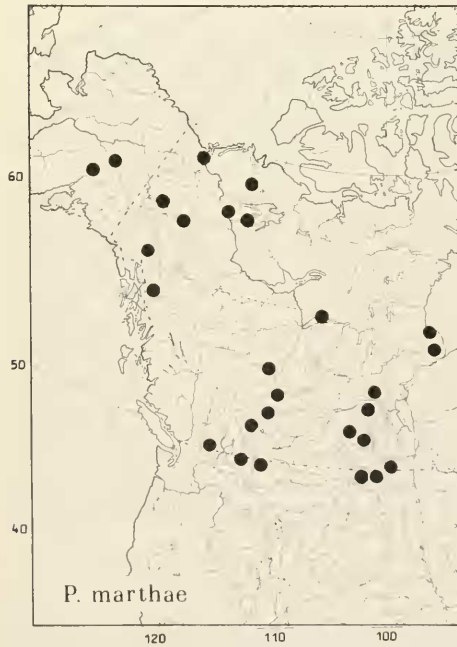
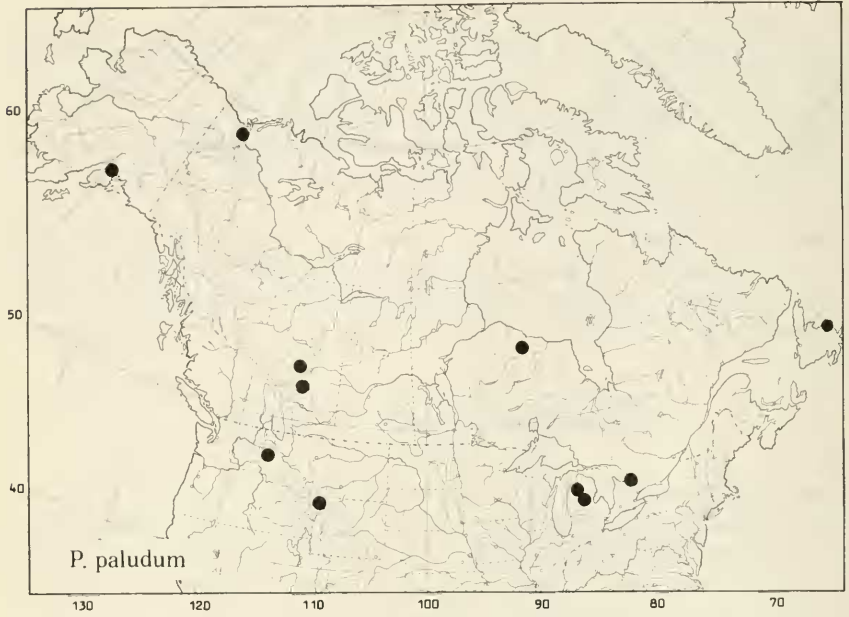
Holotype.—♂, Bear Lake, Bear Lake Co., Idaho, 19 July 1959, B. A. Foote. National Museum of Natural History.

Paratypes.—Same data as holotype (18 ♂). Wing length 2.5–3.2 mm. At Cornell University, University of California at Riverside, and the National Museum of Natural History.

Discussion.—This species is known only from Bear Lake, Idaho. The type-locality is described by Foote (1961). The collecting site was a marshy area approximately four miles west of the town of Mud Lake. It is a flood plain area poorly drained, with many extensive marshes bordering the Bear River north of the lake. The collection locality was at the edge of one of these marshes. Foote states “The marsh is completely unshaded and supports a rich stand of hydrophilic vegetation composed primarily of numerous species of sedges (mostly *Carex* spp.) and rushes. At the time of collection in mid-July the water depth was less than one foot, and extensive areas lacked standing water, although the soil was water-logged. Aquatic snails are abundant and include such common genera as *Lymnaea*, *Physa*, *Heli-*

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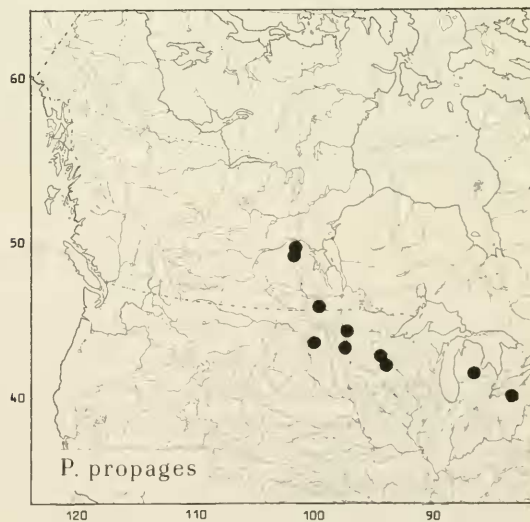
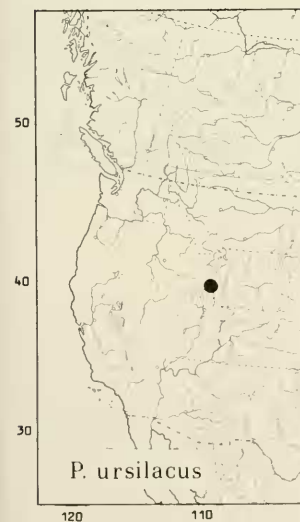
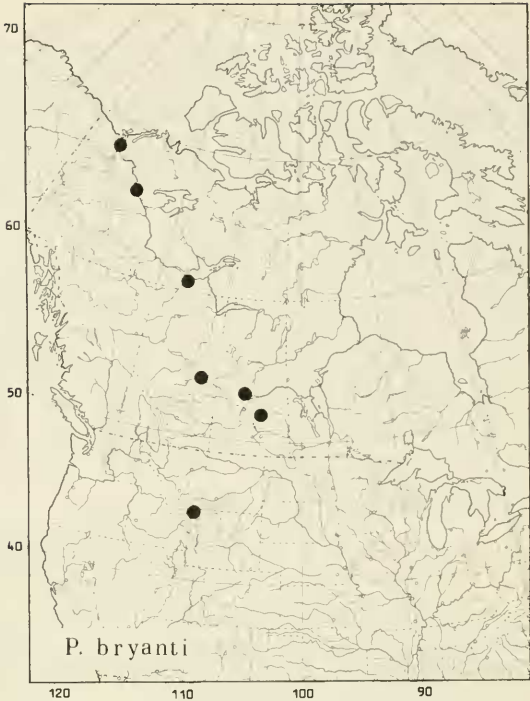
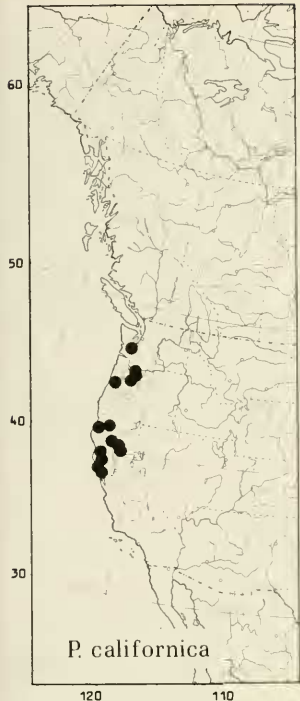
1969, W. W. Wirth. 30–32, *P. ursilacus*, paratype male; Bear Lake, Bear Lake Co., Idaho, 19 July 1959, B. A. Foote. 21, 24, 27, 30, Aedeagus, sinistral profile. 22, 25, 28, 31, Posterior process of hypandrium, side view. 23, 26, 29, 32, Posterior process of hypandrium, posterior oblique view.



SCALE  
0 100 200 300 400 500 MILES  
0 100 200 300 400 KILOMETERS  
LAMBERT AZIMUTHAL EQUAL-AREA PROJECTION

GOODE BASE MAP SERIES  
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Fig. 33. Collection sites for *Pherbellia borea*, *P. marthae*, and *P. paludum*.



GOODE BASE MAP SERIES  
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Fig. 34. Collection sites for *Pherbellia bryanti*, *P. californica*, *P. propages*, and *P. ursilacus*.

*soma*, and *Gyraulis*. Many snails are stranded on the wet soil as the water level recedes during the summer months. A very interesting group of sciomyzid species was taken including some forms not collected elsewhere in the state (e.g., *Pherbellia obtusa* and *Sepedon anchista*).” Under distribution Foote (1961) reports “*Pherbellia obtusa* (Fallén).—Recorded from Bear Lake on July 19 [1959] when approximately 60 adults were taken during a two-hour search of the marsh.” It has since been determined that *P. obscura* is Palaearctic. According to Bratt et al. (1969) *P. argyra*, a holarctic species, has been until recently misidentified as *P. obtusa*. I have seen specimens from Cornell University which are *P. argyra* and bear the exact above data. With the above information it appears that Foote’s *P. obtusa* was comprised of both *P. argyra* and *P. ursilacus*.

This species most closely resembles *Pherbellia marthae*. This species name is the latinization of the type-locality; Ursa—bear + lacus—lake; it is either a noun in apposition or in the genitive case, both of which have the same form.

#### *Pherbellia bryanti* Steyskal

Figs. 5, 14–16, 34

The holotype male was examined and agrees well with Figs. 5, 14–16. Collection data for the holotype: Aklavik, Northwest Territories, 20 Aug. 1930, O. Bryant, National Museum of Natural History Type no. 67875. Wing length 2.9 mm.

Other specimens.—In addition to the holotype I have seen specimens from the following localities (Fig. 34): *Alberta*: Soda Lake. *Northwest Territories*: Aklavik; Good Hope; Hay River. *Saskatchewan*: Parkside; Quill Lake. *Wyoming*: Gibbon Falls, Yellowstone National Park.

Discussion.—This species is known from Aklavik, Northwest Territories to Yellowstone National Park, Wyoming. Collection data has its distribution restricted to a narrow band just east of the continental divide.

#### *Pherbellia propages* Steyskal

Figs. 9, 27–29, 34

The holotype male was examined and agrees well with Figs. 9, 27–29. Collection data for holotype: Aweme, Manitoba, 9 Oct. 1915, N. Criddle, National Museum of Natural History Type no. 67877. Wing length 2.7 mm.

Other specimens.—In addition to the holotype I have seen specimens from the following localities (Fig. 34): *Saskatchewan*: Hudson Bay; Cantyre. *Michigan*: Midland Co. *Minnesota*: Anoka Co., Cedar Creek Bog; Norman Co.; Ramsey Co., University Farm, St. Paul. *North Dakota*: Burleigh Co., Long Lake; Leonard.

Discussion.—Collection data reveal this species to be more or less restricted to north central United States and south central Canada. Its known distribution overlaps in part with *P. marthae* and *P. paludum*.



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